



Central Puget Sound Regional Fare Coordination System

Portable FTP Operations Manual - WSF

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Contents

1	Introduction.....	3
1.1	Purpose.....	3
1.2	Scope.....	3
1.3	Training Mode.....	3
2	Device Overview.....	7
2.1	Screen Icons and Buttons.....	8
2.2	Display Screen Layout.....	9
2.3	The Keypad and Button Relationship.....	11
2.4	Moving the Cursor Between Fields.....	12
3	Operation.....	13
3.1	Activation.....	13
3.2	View PFTP Owner Information Screen.....	18
3.3	Fare Mode.....	20
3.4	Transactions.....	24
3.4.1	<i>Transaction Type Indicators.....</i>	<i>24</i>
3.4.2	<i>Transaction Examples by Customer Type.....</i>	<i>25</i>
3.4.3	<i>Transaction Examples with Warnings.....</i>	<i>25</i>
3.4.4	<i>Examples of Invalid Transactions.....</i>	<i>26</i>
4	Troubleshooting.....	27
5	Error Messages.....	29
Appendix A	Entering Text.....	31
A.1	Correcting Text.....	32
Appendix B	Terminology.....	33
B.1	Acronyms and Abbreviations.....	33
B.2	Terms and Definitions.....	33
Appendix C	Lists of Tables and Figures.....	35
C.1	List of Tables.....	35
C.2	List of Figures.....	35
Appendix D	References.....	36
Appendix E	Document History.....	37

1 Introduction

The Portable Fare Transaction processor (PFTP) for Washington State Ferries (WSF) is a portable device which is used in the [Automated Fare Collection \(AFC\) Regional Fare Coordination System \(RFCS\)](#) system. ~~The PFTP interacts with the passengers and the ferry staff to create an Automated Fare Collection (AFC) system.~~ The [AFC/RFCS](#) allows ~~passenger~~[customer](#)s to pay for their journey conveniently by using a smart card ~~by using a smart card~~. The PFTP provides the following functions:

- ~~Operator Multi-d~~Destination functionality
- Bar Code Fare Payment
- Smartcard Fare Payment
- Configuration Data and Usage Data Transfer.

~~Passenger In specific designated operations, customers present a smart cards to a PFTP to travel on train, bus, and ferry services present a smart card to a PFTP in order to travel on all modes of public transport including train, bus and ferry services.~~ These transactions are passed from the PFTP to a central computer known as the Data Acquisition Computer (DAC) through the wireless data transfer system. ~~This information, referred to as Usage Data (UD) includes payment, route, and device information that is communicated to the DAC. This information, referred to as Usage Data (UD), includes payments for journeys, runs/routes, and shift details that is recorded to the DAC. The DAC also sends information, referred to as Configuration Data (CD), such as new pricing and updates for cards to the PFTP. The DAC also sends information, referred to as Configuration Data (CD), such as timetables, fare schedules and device settings to the PFTP.~~

1.1 Purpose

This document provides [detailed usage information for operators of the](#) ~~detailed information for operators in the use of the~~ PFTP hand-held device.

1.2 Scope

The scope of this document is limited to instructions relating to the navigation of operator screens on the PFTP and the [taking collection](#) of fares.

1.3 Training Mode

[Training mode is a non-production operating mode that mimics the production modes of the PFTP in most respects. Training mode allows operation of the PFTP in realistic scenarios with out creating production transactions.](#)

[Training mode transactions follow the same data path as normal transactions \(to the DAC, BOC, and Clearing House\). This enables end-to-end testing \(card to Clearing House\) to be conducted in the revenue system. Although training transactions are cleared, they are not included in financial settlement.](#)

For normal operations, the PFTP rejects Training mode fare cards. In Training mode, the PFTP rejects normal fare cards (i.e., fare cards that do NOT have the Training bit enabled).

To enter Training Mode on the WSF PFTP, you must start at the Operating System Desktop for the PFTP device. If the PFTP program is running:

1. Tap the “i” Information icon in the lower left corner.
2. Tap the **Exit** icon.

The program shuts down and the Operating System Desktop is visible.

To enter Training Mode:

1. Tap the **Windows** icon in the lower left corner.

A menu appears.

2. Tap the **Programs** icon.

A menu of program links appears.

3. Tap the **DeviceConfig** link.

The **Initializing** screen displays, then the **Configuration** screen displays as shown in Figure 1.

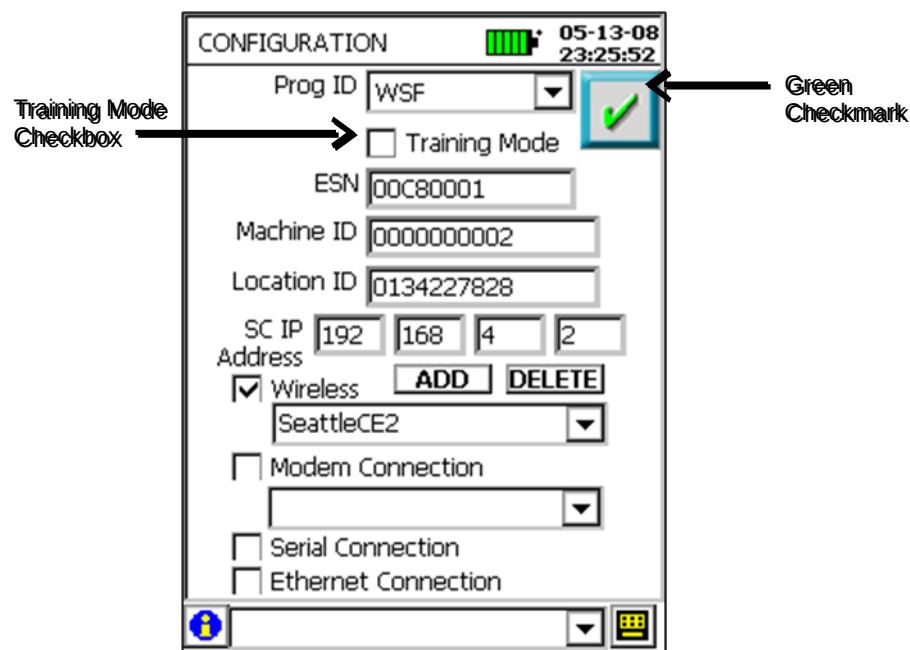


Figure 1: Configuration screen - Enable Training Mode

4. Check the **Training Mode** checkbox.

Note: Do not change any of the other settings on this screen.

5. Click the green **Checkmark** icon in the upper right corner.

The program initializes then opens the second Configuration screen as shown in Figure 2.

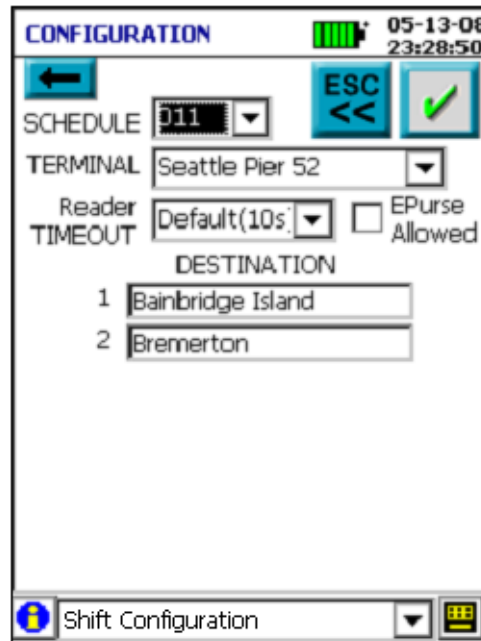


Figure 2: Shift Configuration screen - Select Green Checkmark

Note: Do not change any of the settings on this screen.

6. Click the green **Checkmark** icon in the upper right corner.

The Wait...Creating Backup message displays at the bottom of the screen; this may take a few seconds.

The screen goes blank, the system finishes initializing and connecting for CD/UD transmission, then the Fare Mode screen displays.

When in Training Mode, the following indicator appears to the left of the **Battery** icon in the upper right corner: (T), as shown in Figure 3.

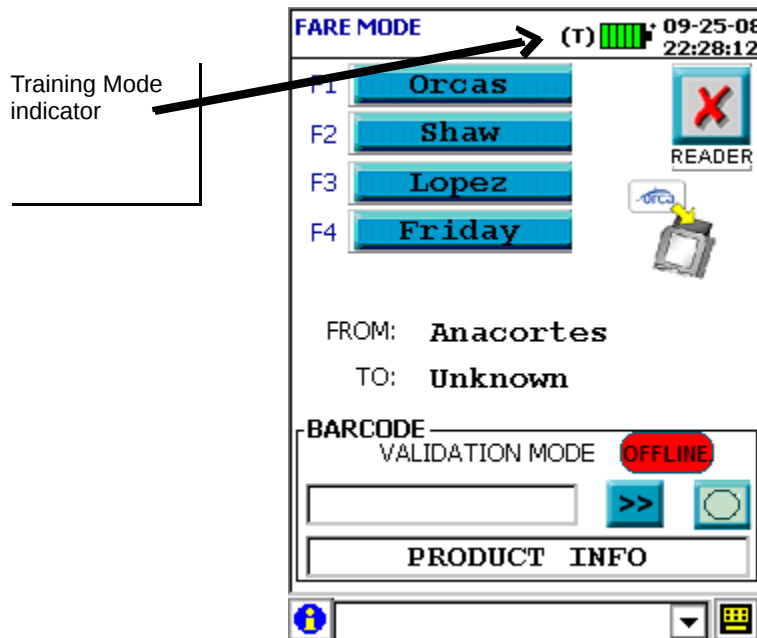


Figure 3: PFTP Training Mode indicator – Fare Mode example

When operating in Training Mode, the PFTP operation is identical to normal revenue operation except as follows:

- The PFTP will only read Training Mode fare cards
- The PFTP remains in Training Mode until the operator logs off
- All UD records have the environment set to Training Mode
- No Audit Registers are updated. [Audit Registers are where the PFTP stores a record of its activity. The Audit Registers record types of activities, not activity content. For example, the Audit Registers might have a record that a fare card was tagged at a particular time, but no details of the transaction that resulted from the tag.](#)

Note: ~~Training Mode transactions follow the same data path as normal transactions (to the DAC, BOC, and Clearing House). This enables end-to-end testing (card to Clearing House) to be conducted in the revenue system. Note that while training transactions are cleared, they are not included in financial settlement.~~

~~For normal operations, the PFTP will reject Training Mode fare cards. In Training Mode, the PFTP will reject normal fare cards (i.e. fare cards that do NOT have the Training bit enabled).~~

To exit Training Mode:

Follow the same process as entering Training Mode, except you uncheck the **Training Mode** checkbox.

2 Device Overview

The PFTP device provides operators with the ability to:

[Accept fares and passes.](#)

- [Inspect passenger cards](#)
- [Provide card details to passengers.](#)

The PFTP device has a display screen that shows the details of transactions. There are two ways information can be entered:

- **The Display Screen** — Display screen icons and buttons may be selected using the stylus that is provided with the PFTP. In addition, there is a keyboard icon that displays a [QWERTY standard](#) keyboard on the display screen. The keyboard can be used to enter text by tapping with the stylus.
- **The Keypad** — Icons and buttons on the display screen can be selected by pressing the corresponding hotkeys on the keypad. The Directional Toggle Button can be used to change items highlighted for use on the display screen.



Figure 4: Portable Fare Transaction Processor (PFTP)

When using the stylus and the display screen keyboard:

- Do not rest your fingers or hand on the display screen while using the stylus to select keys
- Do not use anything but the stylus. A pen, pencil, or other pointed object can damage the display screen
- Press and tap firmly when using the stylus. The display screen is designed for use with the stylus.

The keypad of the PFTP is similar to a cell phone keypad. The keypad has:

















- Alphanumeric keys to enter information, or that can be used as hotkeys to execute functions shown on the display screen



- Directional toggle button that is used to change the selection of the highlighted item on the display screen.

2.1 Screen Icons and Buttons

Most icons shown on the display screen have a corresponding hotkey on the PFTP keypad. Table 1 displays icons and their equivalent hotkey buttons. Some icons and hotkey buttons have functions that change between screens.

Table 1: Display Screen Icons and Keypad Button Reference Chart

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
Tap on screen	Backlight on		Used when the display screen goes to 'sleep'
	Scan Inquiry icon	No equivalent	FARE MODE screen
	Card Reader On icon	No equivalent	Shows that the card reader has been activated
	Card Reader Off icon		Shows the card reader is deactivated. Tapping the display screen button or pressing the hotkey activates the card reader.
	Information icon	No equivalent	LOG IN screen
	Escape icon		On some screens, pressing the Enter key will also activate the ESC function
	Keyboard icon	No equivalent	Displays/hides the display screen keyboard
F1  (typical)	Field Inquiry icon	Equivalent numbered button i.e.  + 	FARE MODE screen
	TCON not Connected	No equivalent	FARE MODE screen
	TCON Connected	No equivalent	FARE MODE screen
	No Bar Code Scan	No equivalent	FARE MODE screen
	Valid Bar Code Scan -Online	No equivalent	FARE MODE screen

Display Screen icon or action	Description	Equivalent Keypad hotkey	Used
	Valid Bar Code Scan - Offline	No equivalent	FARE MODE screen
	Invalid Bar Code Scan	No equivalent	FARE MODE screen

2.2 Display Screen Layout

The following figure shows the various ways information appears on the display screen. These include:

- **Indicators** – The top bar of the display screen displays information about the screen title, the battery status, the date, and the time.
- **Display Screen Text information** – During different actions, information is provided to assist the user.
- **Display Screen Buttons** – Buttons have a beveled edge and can be tapped with the stylus to carry out specific actions.
- **Icons** – A small picture or symbol used to represent an item or to go to another screen. Icons appear within the display window to operate in much the same way as display screen buttons.
- **Drop-down Lists** – A fixed list of options or functionalities from which the user may choose. The drop-down menu may be fully accessed by clicking on the down arrow button to the right of a selection box: Sometimes an option in such a list activates a new menu (e.g., the sorting option). The required item is selected by tapping on it.

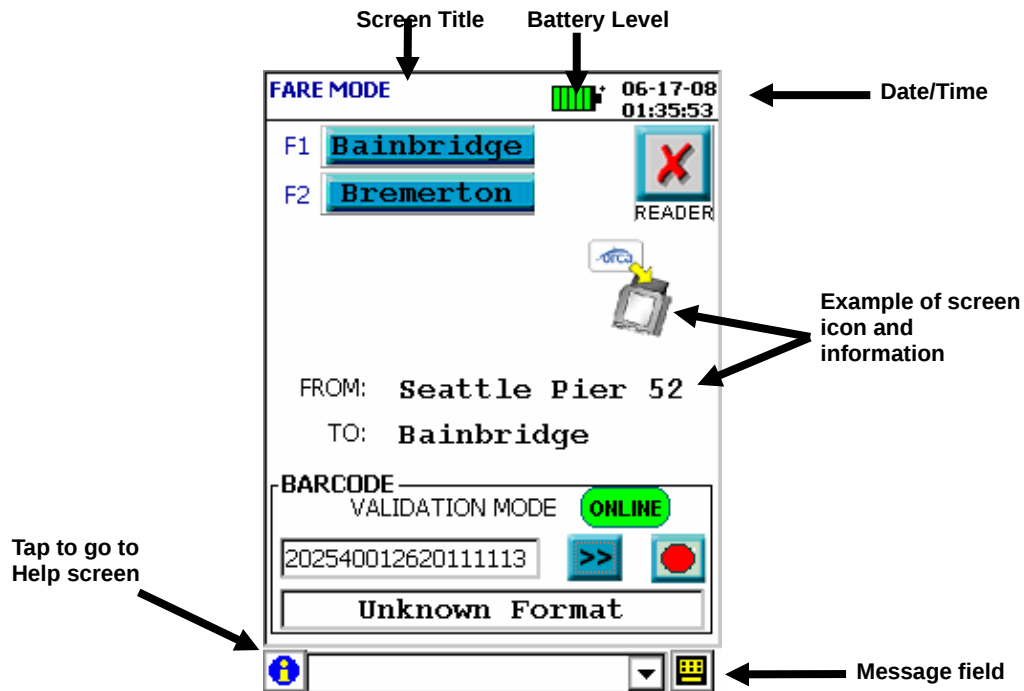


Figure 5: Example of display screen layout

2.3 The Keypad and Button Relationship

Figure 6 shows an example of how icons and buttons on the display screen correspond to hotkeys located on the keypad.

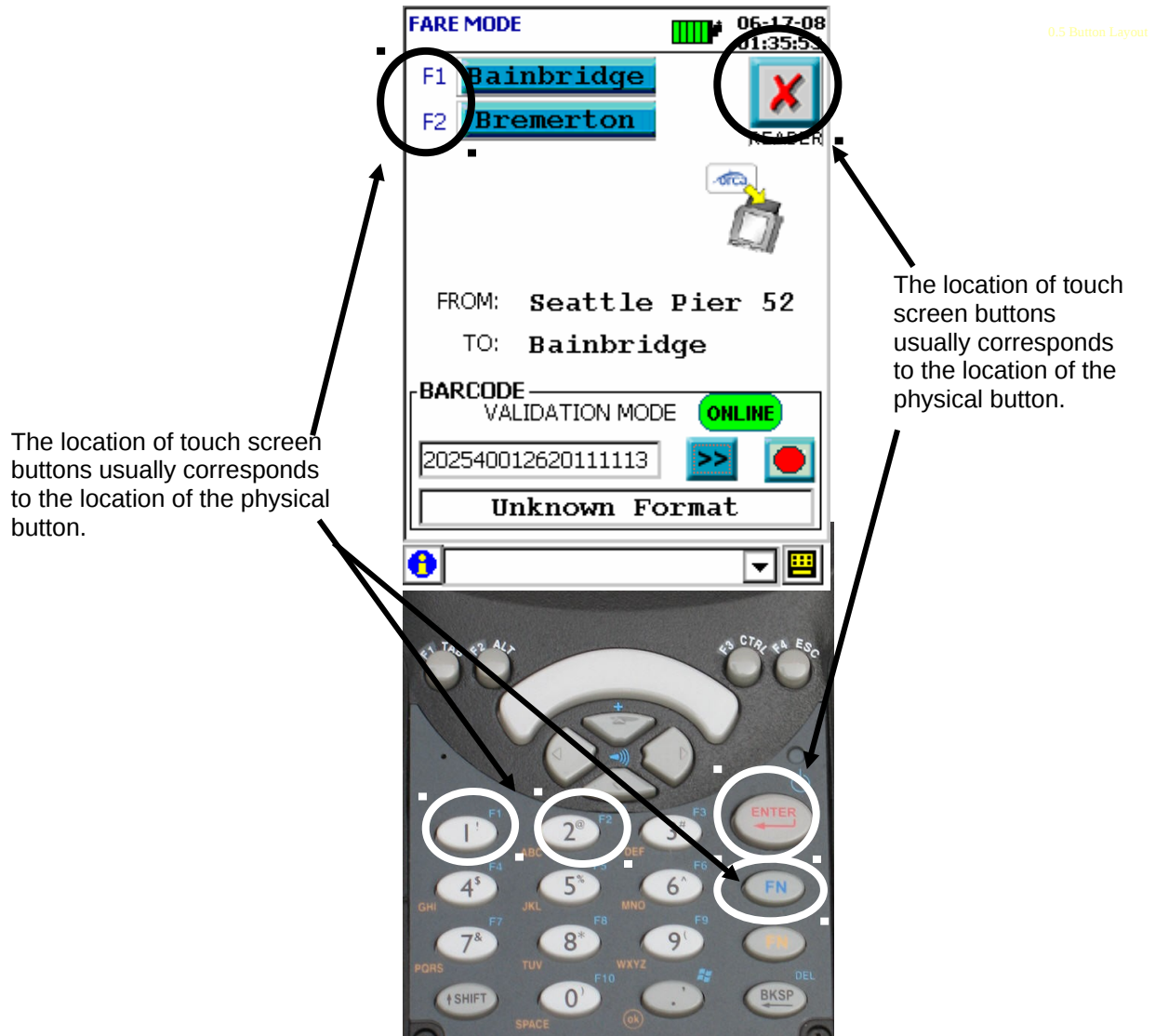


Figure 6: Keypad and Button Relationship

2.4 Moving the Cursor Between Fields

Tap the **Tab** key on the keyboard to move the cursor from one field to the next or use a **Directional Arrow** key (see Figure 7).

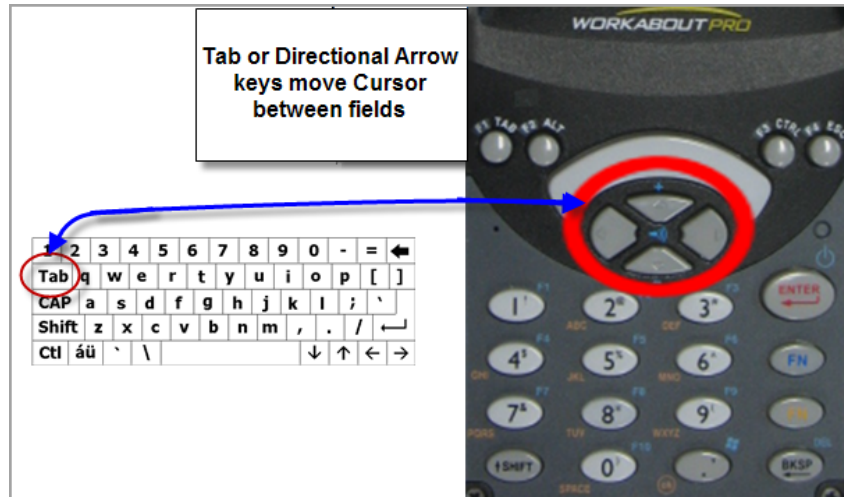


Figure 7: Directional Keys

You can cycle through the fields in the reverse direction by tapping the **Shift** key before each tap of the **Tab** key or using the opposite **Directional Arrow** key.

3 Operation

This section describes the method for activation and operation of the PFTP. The following topics are covered:

- Activation of the PFTP (see section 3.1)
- Viewing PFTP Owner Information on the screen (see section 3.2)
- Fare mode (see section 3.3)
- Carrying out transactions (see section 3.4)
- }

3.1 Activation

When the PFTP device first is powered on, the device goes through the process of sending and receiving CD and UD from the DAC to the PFTP. If the PFTP is not correctly configured, the sending and receiving of data will need to take place before PFTP can be used. User action is indicated by the use of numbers.

To start up the PFTP device:

1. Press the **Power** hotkey.

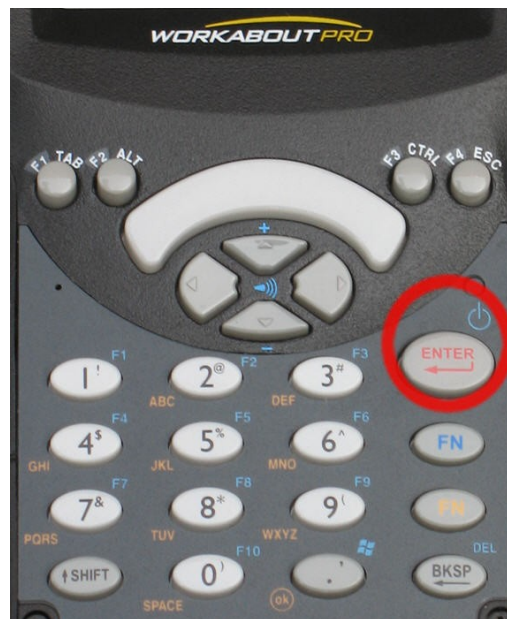


Figure 8: Power hotkey and Power symbol

The **Initializing** screen is displayed while the device starts up.

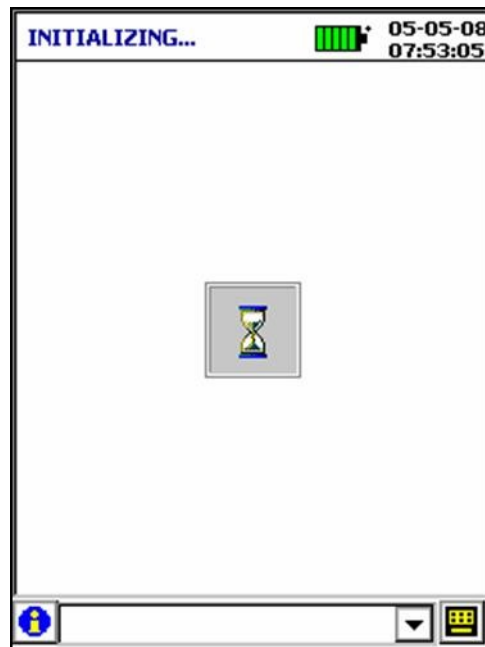


Figure 9: Initializing screen

The **Connecting** screen is displayed while the device attempts to connect to the DAC.



Figure 10: Connecting screen

The **Connected** screen is displayed when connection to the DAC is established.



Figure 11: Connect screen

The latest CD will then automatically download from the DAC to the PFTP, and the latest UD will upload from the PFTP to the DAC.

The **Connect Failed** screen is displayed when the attempted connection to the DAC fails. This may happen because the PFTP is out of signal range or because of a problem with the DAC itself. The PFTP will continue the startup sequence to display the [Fare Modeuser Log-In](#) screen. The PFTP will continually retry the connection to the DAC, so that data transfer can take place.



Figure 12: Host Connection Fail

The **Data Transfer** screen indicates the transfer progress of data sent and received by the DAC and the PFTP.

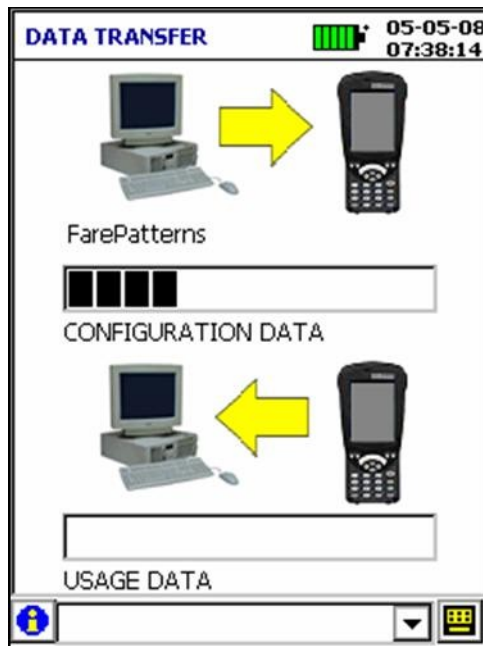


Figure 13: Data Transfer screen

In the event of an RFCS upgrade, the new version of the software application is downloaded with the following message displayed.

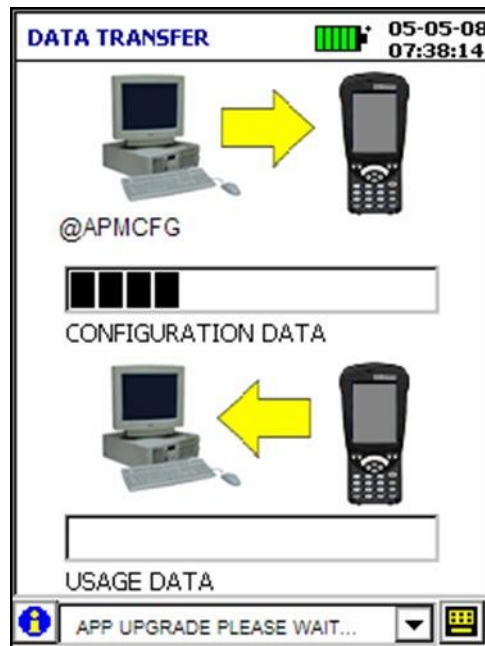


Figure 14: Data Transfer screen during Application Upgrade

When the data transfer is complete, the **Fare Mode** screen is displayed.

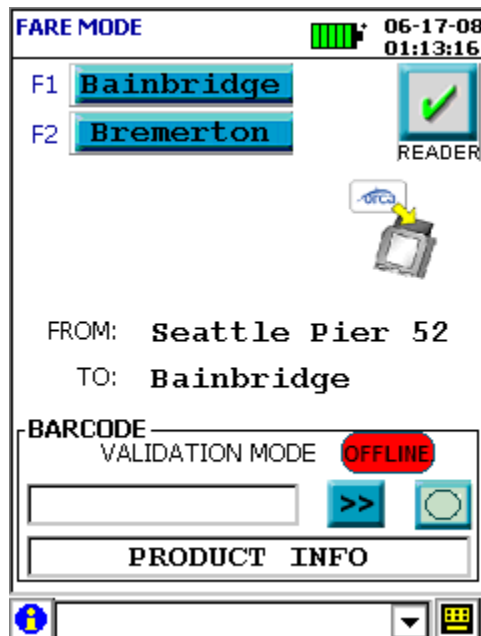


Figure 15: Fare Mode screen

3.2 View PFTP Owner Information Screen

The Information screen provides details about the owner of the PFTP device and contact information if the device is lost or stolen.

To view the **Information** screen:

2. Tap the **Information** icon.

Note: There is no hotkey equivalent for the Information icon.

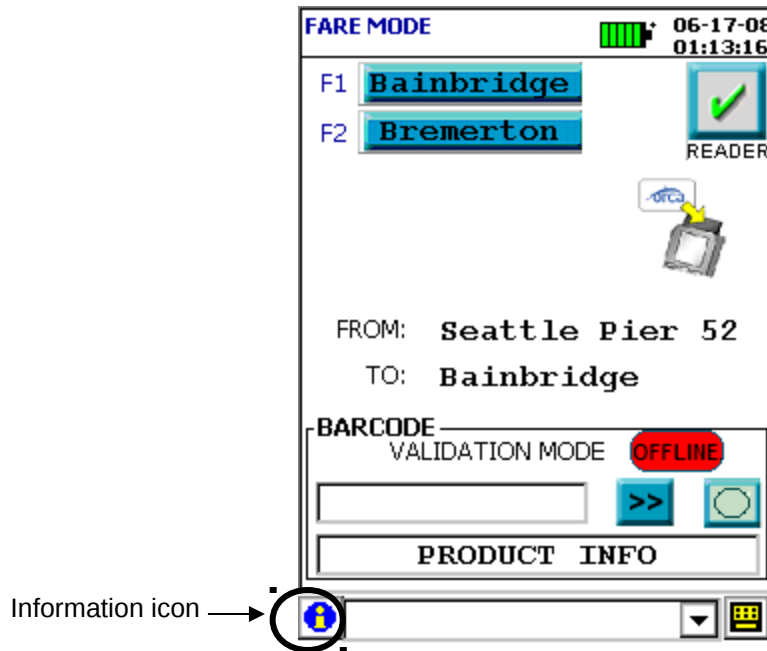


Figure 16: Icon for Information

The information menu will be displayed.

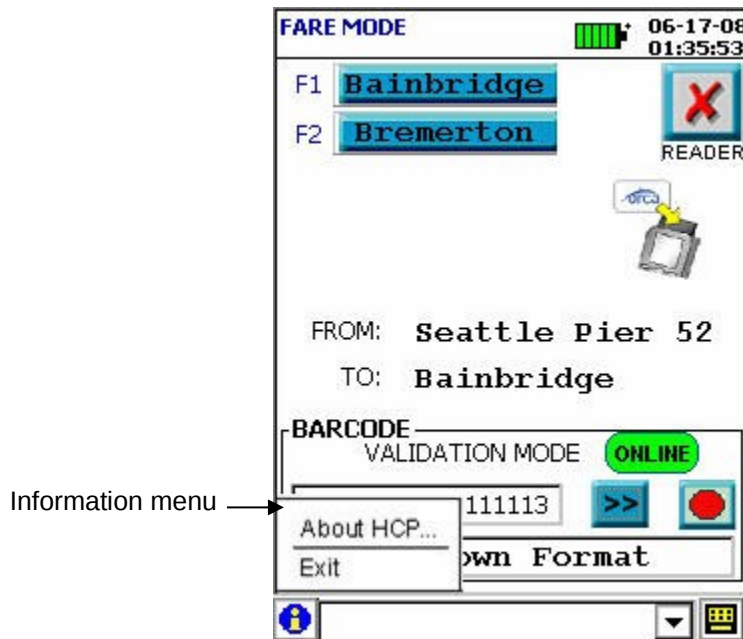


Figure 17: Information menu

3. Tap the **About HCP...** link

The **Information** screen is displayed



Figure 18: Information screen

4. To return to the **Log In** screen, press the **ESC** hotkey or tap the **ESC** icon.

The **Enter** hotkey can also be used to close the **Information** screen.



Figure 19: Escape from Owner Information screen

The display returns to the previous screen.

3.3 Fare Mode

When the PFTP is in Fare Mode, the information on [passengercustomer](#) fare cards can be read by the device. This allows fare cards to be processed. The PFTP has a card reader inside the device.

Fare cards are presented to the back of the device.



Figure 20: PFTP in Fare Mode

Note: For non-smartcard products, fares can also be processed using the trigger-operated Bar Code reader installed in the pistol grip.

If the card reader is switched off, the **Card Reader** icon is crossed out.

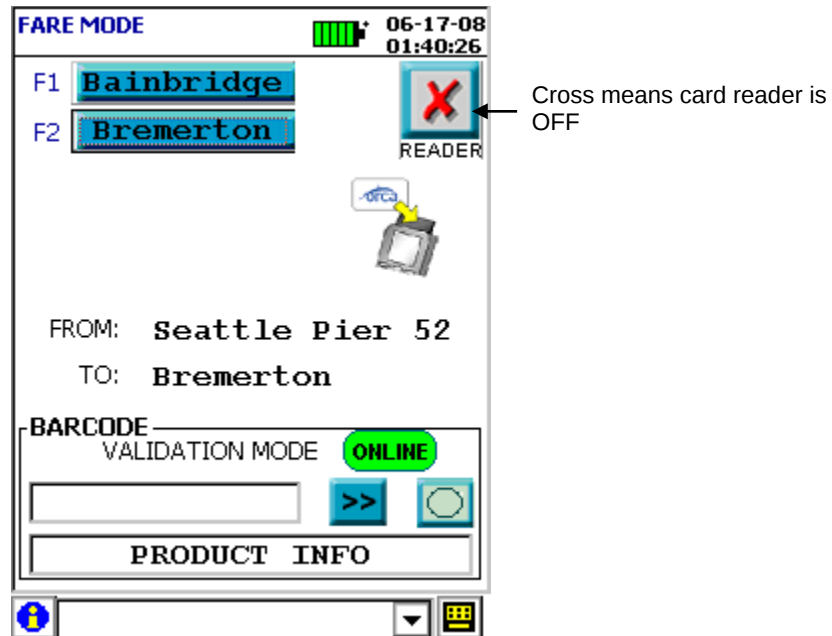


Figure 21: Card Reader Off indicator

The Card Reader will stay active for a preconfigured amount of time, after which the PFTP card reader is automatically switched off to conserve battery power.

5. Press the **Enter** hotkey or tap the **Card Reader Off** icon.
6. Present the fare card to the card reader.

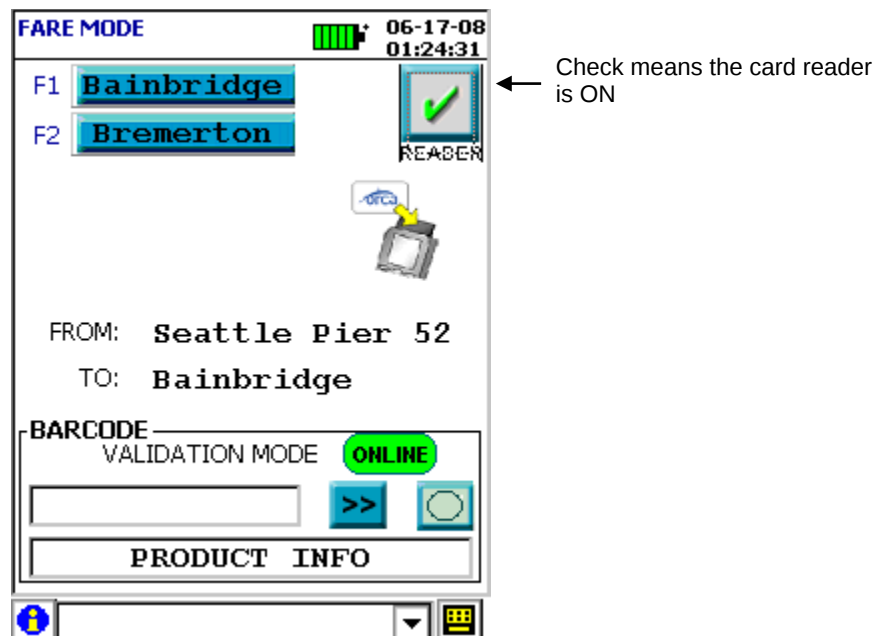


Figure 22: Card Reader On indicator

The transaction status is displayed with corresponding audio.

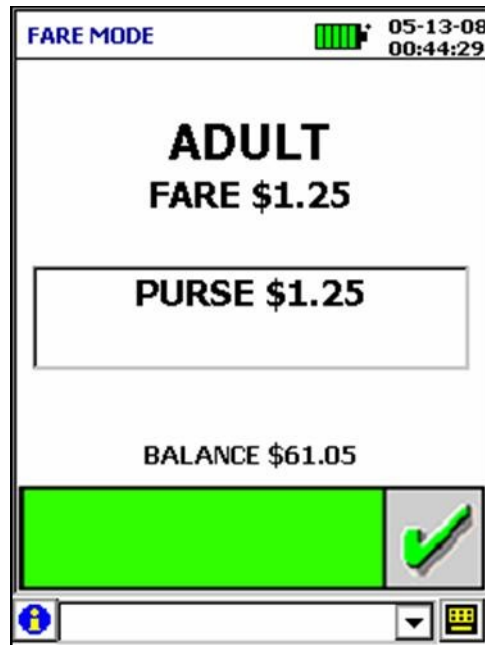


Figure 23: Card Read Result

After a preset timeout, the display returns to **Fare Mode** screen.

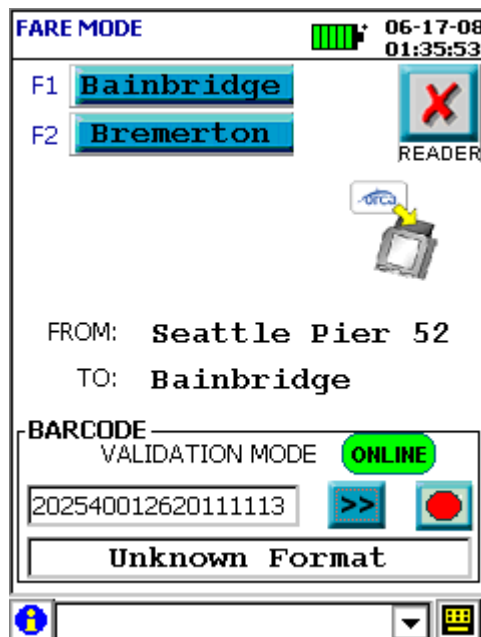


Figure 24: Return to Fare Mode display

7. Present the next fare card to the card reader.
8. Press the relevant destination hotkey or tap the relevant icon to change the destination for the next [passengercustomer](#).

After a preset timeout, the display returns to the **Fare Mode** screen.

3.4 Transactions

This section describes Fare Mode display screens that are shown during various transaction processes. Some processes include the system emitting warning beeps, as is described with the relevant example screens.

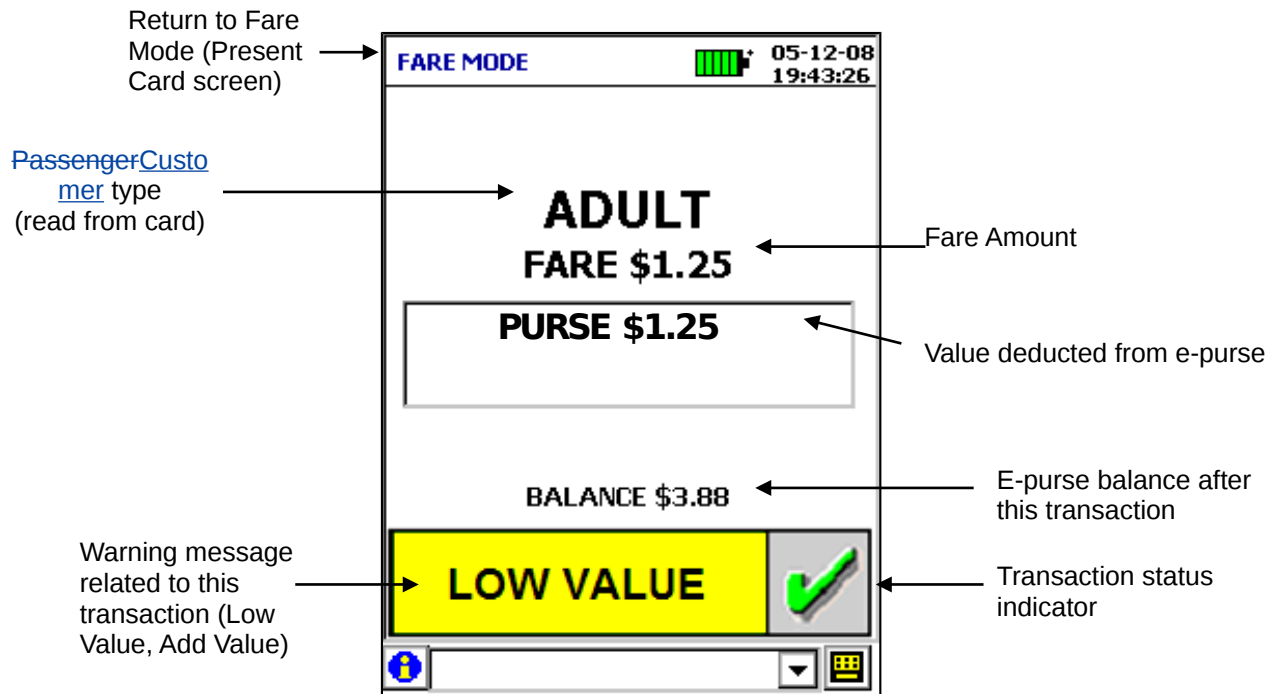


Figure 25: Transaction example

3.4.1 Transaction Type Indicators

Different colored displays and a range of different audio beeps are used to indicate specific responses to transactions. Figure 26 shows examples of the responses.

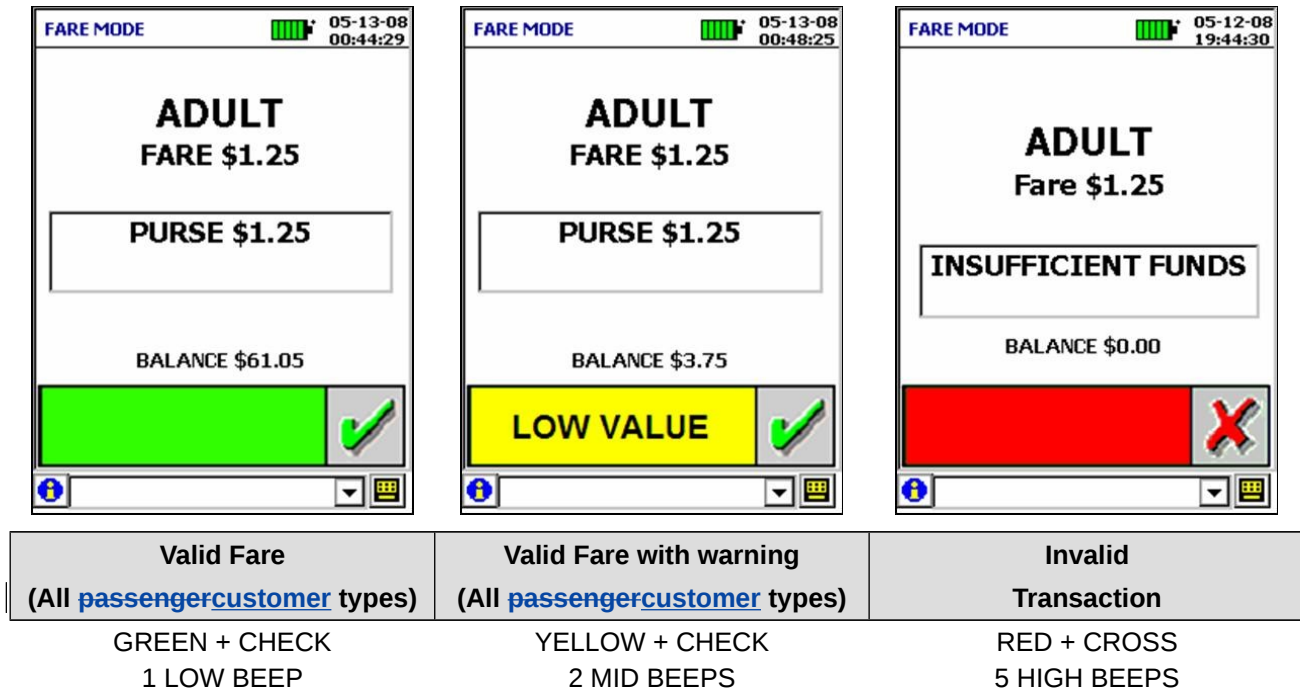


Figure 26: Transaction Type Indicator examples

3.4.2 Transaction Examples by [PassengerCustomer](#) Type

Full Fare Paid transactions include no warnings.

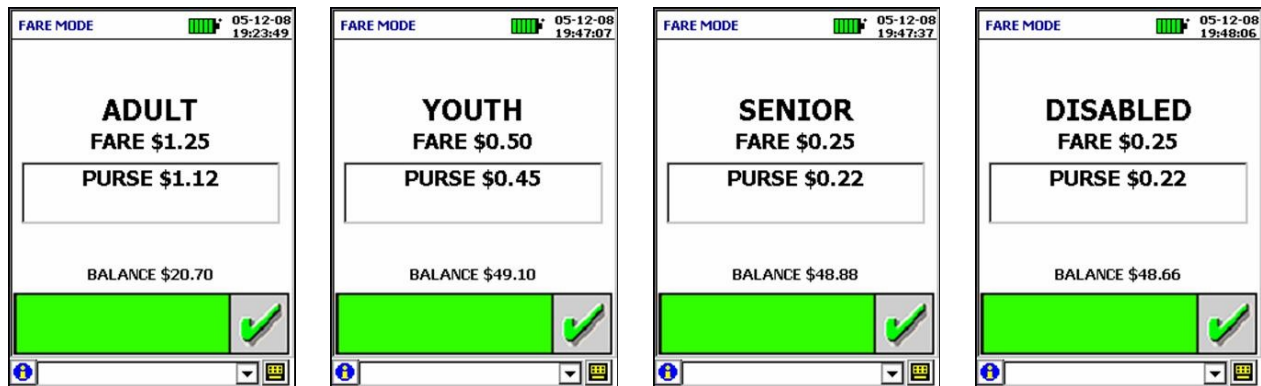


Figure 27: Transaction examples by [PassengerCustomer](#) Type

3.4.3 Transaction Examples with Warnings

Warnings are provided to [passengercustomer](#)s to indicate when their cards are running low on available funds or when current passes are due to expire. Warnings also notify when new e-purse value or a new pass is added to a card.

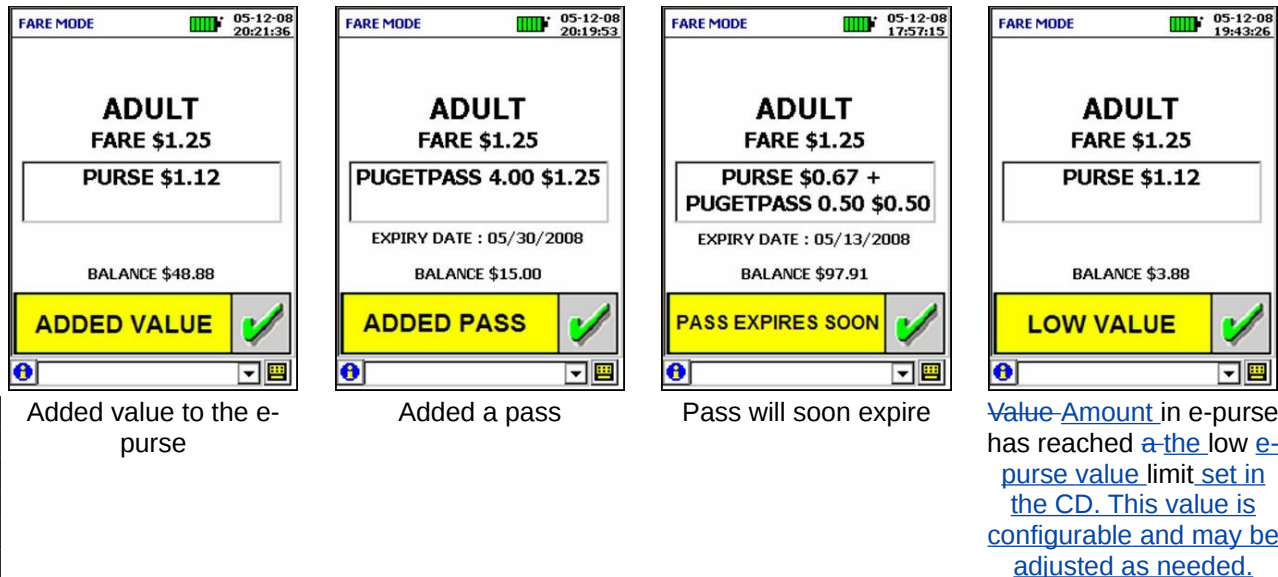


Figure 28: Transaction examples with Warnings

3.4.4 Examples of Invalid Transactions

The following screens show examples of invalid transactions.

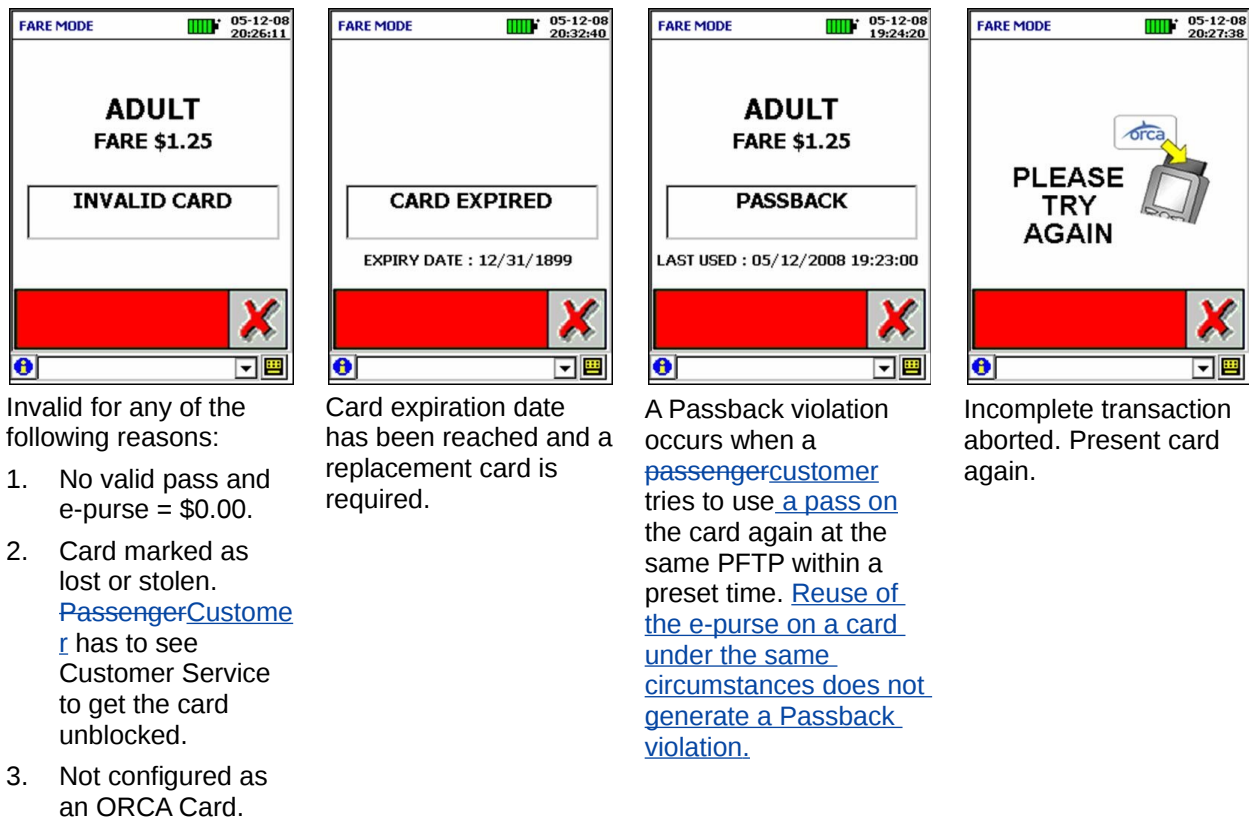


Figure 29: Invalid Transaction examples

4 Troubleshooting

- Device does not respond

Press blue **FN** key and **Enter** key at the same time, holding them both down until the screen goes blank. The system will reboot, going through the startup process automatically.

- Program is accidentally closed

This will happen if the **Exit** link is chosen on the Information icon Menu (instead of choosing **About HCP**). To restart the program, tap the **Windows/Start** button in the lower left corner, choose Programs, then HCP. The PFTP will go through the normal startup procedure.

- Device will not restart

If the PFTP will not start, the reason could be that the batteries may be discharged. Recharge the batteries by placing the device into the cradle provided until the batteries are fully recharged. When the battery is fully recharged, the **Battery Charge** indicator at the top of the screen will be highlighted all the way across to the + symbol.

In normal use, battery charge should be checked periodically and action taken to avoid situations in which the batteries become fully discharged.

5 Error Messages

The following error messages are generated when conditions exist that relate to the PFTP. Action must be taken as described on the screens to rectify the condition that caused the error message to appear.

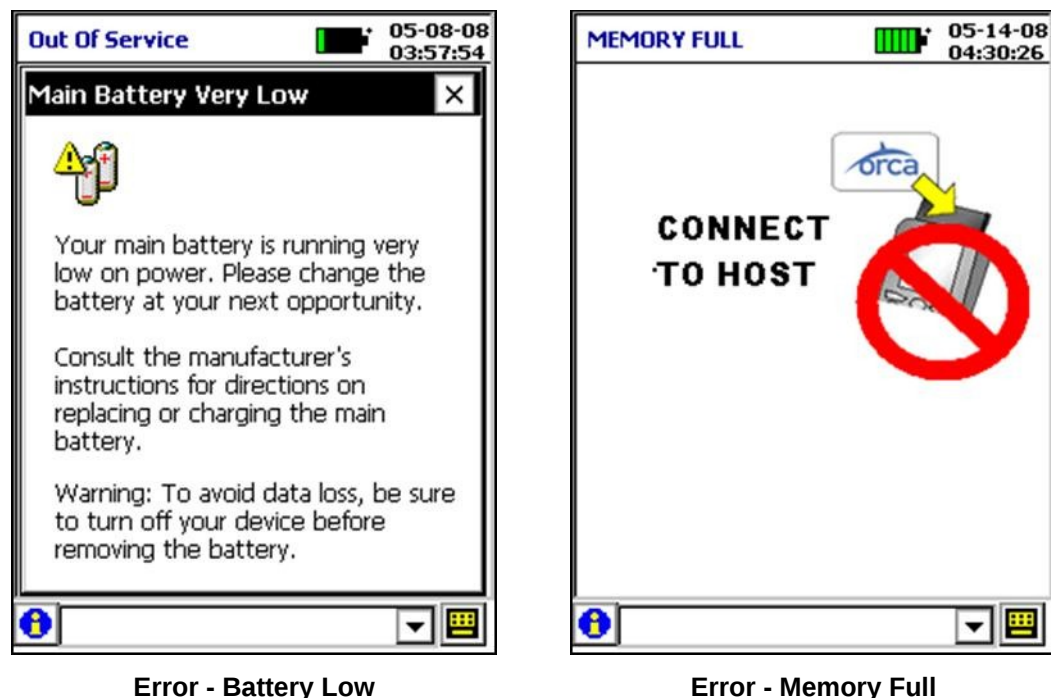


Figure 30: Error screen examples – Battery Low & Memory Full

- **Battery Low**

Recharge the batteries by placing the device into the cradle provided until the batteries are fully recharged. When the battery is fully recharged, the **Battery Charge** indicator at the top of the screen will be highlighted all the way across to the + symbol.

In normal use, battery charge should be checked periodically and action taken to avoid situations in which the batteries become fully discharged.

- **Memory Full**

Placing the device into the cradle will trigger an automatic uploading of data.

Appendix A Entering Text

To enter text into the PFTP, you can use keys on the physical keypad, or you can use the stylus to tap the keys on the display screen keyboard. To use some characters on the physical keypad, the orange **FN** key or the **SHIFT** key must be pressed to access that corresponding set of characters.

The bottom right corner of the screen displays a keyboard icon, which can be tapped to display or hide the on-screen keyboard.



Figure 31: Screen Keyboard Icon

The display screen keyboard is based on the characters available on a standard keyboard. Due to limitations on screen space, the keyboard is presented in several views, with each view displaying a subset of the available characters.

The default view shows lower case characters, digits, and punctuation. The large button on the bottom row inserts a space character.

1	2	3	4	5	6	7	8	9	0	-	=	⬅	
Tab	q	w	e	r	t	y	u	i	o	p	[]	
CAP	a	s	d	f	g	h	j	k	l	;	`		
Shift	z	x	c	v	b	n	m	,	.	/		↩	
Ctl	á	ü	`	\						↓	↑	⬅	➡

Figure 32: Keyboard display – Lower Case

Tapping the **CAP** key displays the upper case characters and a second set of punctuation characters. Tapping the **CAP** key again reverts to the default view.

!	@	#	\$	%	^	&	*	()	_	+	Del	
Tab	Q	W	E	R	T	Y	U	I	O	P	{	}	
CAP	A	S	D	F	G	H	J	K	L	:	"		
Shift	Z	X	C	V	B	N	M	<	>	?	↵		
Ctl	á	ü	~							↓	↑	←	→

Figure 33: Keyboard display – Upper Case

Tapping the **Shift** key when the **CAP** view is active temporarily converts the keyboard to title case - one character in upper case followed by lower case for subsequent characters.

1	2	3	4	5	6	7	8	9	0	-	=	⬅	
Tab	q	w	e	r	t	y	u	i	o	p	[]	
CAP	a	s	d	f	g	h	j	k	l	;	`		
Shift	z	x	c	v	b	n	m	,	.	/		⬇	
Ctl	á	ü	`	\						↓	↑	⬅	➡

Figure 34: Keyboard display – Title Case

Tapping the **áü** key displays a set of lower case special characters.

¿	í	¢	€	£	¥	§	¶	±	°	«	»	⬅	
Tab	à	á	â	ã	ä	å	æ	ç	ð	è	é	ê	
CAP	ë	ì	í	î	ï	ñ	ø	œ	ò	ó	ô		
Shift	õ	ö	ß	þ	ù	ú	û	ü	ý	µ	↵		
Ctl	áü	®	©							↓	↑	←	→

Figure 35: Keyboard display – Special Characters Lower Case

Tapping the **CAP** key when the **áü** view is active displays the corresponding set of upper case characters, and tapping the **Shift** key when the **áü** view is active temporarily converts the keyboard to title case.

¿	í	¢	€	£	¥	§	¶	±	°	«	»	De	
Tab	À	Á	Â	Ã	Ä	Å	Æ	Ç	Ð	È	É	Ê	
CAP	Ë	Ì	Í	Î	Ï	Ñ	Ø	Œ	Ò	Ó	Ô		
Shift	Õ	Ö	ß	þ	ù	ú	û	ü	ý	µ	↵		
Ctl	á	ü	®	©						↓	↑	←	→

Figure 36: Keyboard display – Special Characters Upper Case

A.1 Correcting Text

If you need to correct text:

- On the lower case keyboard, use the **Backspace** arrow to delete characters to the left of the cursor.
- On the upper case keyboard, use the **Del** key to delete characters to the right of the cursor.
- On the keypad, use the **BKSP** button to delete characters to the left of the cursor
- On the keypad, use the blue **FN** button before the **BKSP** button deletes characters to the right of the cursor.

Appendix B Terminology

This section contains lists of acronyms, abbreviations, and terms used within this document.

B.1 Acronyms and Abbreviations

Table 2 contains relevant acronyms and abbreviations that are specific to the use of the PFTP device by operators. Industry standard acronyms and abbreviations are not defined in this table.

Table 2: Acronyms and Abbreviations

Acronym or Abbreviation	Definition
AFC	Automated Fare Collection
CD	Configuration Data
DAC	Data Acquisition Computer
ERG	ERG Transit Systems (USA), Inc.
ORCA	One Regional Card for All
PFTP	Portable Fare Transaction Processor
RFCS	Regional Fare Coordination System
UD	Usage Data
WSF	Washington State Ferries

B.2 Terms and Definitions

Table 3 contains the terms that are specific to ERG. Industry standard terms are not defined in this table.

Table 3: Terms and Definitions

Term	Definition
Automated Fare Collection	The overall process for collecting and correlating fares and transit products for the Regional Fare Coordination System (RFCS).
card	Refers to a contactless smart card. The medium used by a cardholder to store applications.
Configuration Data	A generic term for data that is sent to a device to configure its functionality. For example, a hotlist of stolen cards is transmitted as part of CD.
Data Acquisition Computer	A central computer that collects the data from on-board, portable, and stand-alone FTPs or other designated RFCS equipment for transfer to the Clearinghouse and provide the relevant Agency with duplicates of the data files transferred to the Clearinghouse.
e-purse	An electronic representation of the monetary value on a smart card.
fare card	A non-disposable smart card for transit use.

Term	Definition
operator	The Agency staff member, ESB staff member, or any authorized person using the RFCS equipment.
pass	A card product that permits unlimited journeys on a specific transit operator within a specific period.
product	A form of contract between the product issuer and passengercustomer . A generic term for the collection of specific product types, i.e., multi-ride, period, or e-purse products.
revalue	Revalue of a card comprises the following operations: <ul style="list-style-type: none"> • Initial value of a fare card with a pass, multi-ride product, or stored value • Addition of a new pass, multi-ride product, or stored value to a fare card • Extension of the period for which a pass is valid • Addition of further rides to a multi-ride product.
timeout	A period of inactivity which results in the device reverting back to the previous screen or logging the operator out.
Usage Data	A generic term for data that is generated when a transaction or event occurs. For example, a transaction record is a type of usage data.

Appendix C Lists of Tables and Figures

C.1 List of Tables

Table 1: Display Screen Icons and Keypad Button Reference Chart.....	8
Table 2: Acronyms and Abbreviations.....	33
Table 3: Terms and Definitions.....	33

C.2 List of Figures

Figure 1: Configuration screen - Enable Training Mode.....	4
Figure 2: Shift Configuration screen - Select Green Checkmark.....	5
Figure 3: PFTP Training Mode indicator – Fare Mode example.....	6
Figure 4: Portable Fare Transaction Processor (PFTP).....	7
Figure 5: Example of display screen layout.....	10
Figure 6: Keypad and Button Relationship.....	11
Figure 7: Directional Keys.....	12
Figure 8: Power hotkey and Power symbol.....	13
Figure 9: Initializing screen.....	14
Figure 10: Connecting screen.....	14
Figure 11: Connect screen.....	15
Figure 12: Host Connection Fail.....	16
Figure 13: Data Transfer screen.....	16
Figure 14: Data Transfer screen during Application Upgrade.....	17
Figure 15: Fare Mode screen.....	17
Figure 16: Icon for Information.....	18
Figure 17: Information menu.....	19
Figure 18: Information screen.....	19
Figure 19: Escape from Owner Information screen.....	20
Figure 20: PFTP in Fare Mode.....	21
Figure 21: Card Reader Off indicator.....	22
Figure 22: Card Reader On indicator.....	22
Figure 23: Card Read Result.....	23
Figure 24: Return to Fare Mode display.....	23
Figure 25: Transaction example.....	24
Figure 26: Transaction Type Indicator examples.....	25
Figure 27: Transaction examples by Customer Type.....	25
Figure 28: Transaction examples with Warnings.....	26
Figure 29: Invalid Transaction examples.....	26
Figure 30: Error screen examples – Battery Low & Memory Full.....	29
Figure 31: Screen Keyboard Icon.....	31
Figure 32: Keyboard display – Lower Case.....	31
Figure 33: Keyboard display – Upper Case.....	31
Figure 34: Keyboard display – Title Case.....	32
Figure 35: Keyboard display – Special Characters Lower Case.....	32
Figure 36: Keyboard display – Special Characters Upper Case.....	32

Appendix D References

- [1] Contract 229944 (April 29, 2003)
Division III: Equipment Specifications.
- [2] DPG-00121 HCP Software Functional Specification
- [3] SEA-01052
Portable Fare Transaction Processor (DR 105B) - Functional Specification

Appendix E Document History

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